UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,241	08/29/2001	Krishan Chari	82300D-W	9136

7590 08/04/2003

Paul A. Leipold
Patent Legal Staff
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

EXAMINER
FORMAN, BETTY J

ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 08/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/942,241	CHARI ET AL.	
	Examiner	Art Unit	
	BJ Forman	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24 and 26-40* is/are pending in the application.

4a) Of the above claim(s) *35-40* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24 and 26-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

FINAL ACTION

1. This action is in response to papers filed 30 May 2003 in which claims 1, 2, 4, 6, 27 and 34 were amended and claim 25 was canceled. All of the amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 26 February 2003 are withdrawn in view of the amendments. All of the arguments have been thoroughly reviewed but are deemed moot in view of the amendments, withdrawn rejections and new grounds for rejection. New grounds for rejection necessitated by the amendments are discussed.

Claims 1-24 and 26-34 are under prosecution. Claims 35-40 are withdrawn.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 is indefinite for the recitation "the organic or inorganic attachments" because the recitation lacks proper antecedent basis in Claim 4. It is suggested that Claim 6 be amended to provide proper antecedent basis e.g. delete "the".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-11, 15-24, 27-29 and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walt et al (WO 00/16101, published 23 March 2000) in view of McGall et al (U.S. Patent No. 6,147,205, filed 5 March 1997).

Regarding Claim 1, Walt et al disclose a coating composition comprising a gelling agent and microspheres dispersed in a fluid (i.e. solution, page 22, lines 9-22) wherein upon coating the composition on a substrate, said microspheres become immobilized in the plane of coating and form a random pattern on the substrate i.e. the microspheres are within a solution which upon evaporation (gelling) holds the microspheres in place (page 22, lines 15-16) wherein the gelling agent is selected from polyethylene glycol and polyacrylamide (page 22, lines 20-22) which are defined by the specification as gelling agents.

The specification (page 5, lines 1-15) defines "gelling agent" as a substance that can undergo gelation. Examples include materials such as gelatin, water-soluble cellulose ethers or poly(n-isopropylaclylalnide) that undergo thermal gelation or substances such as poly (vinyl alcohol) that may be chemically 5 cross-linked by a borate compound. Other gelling agents may be polymers that may be cross-linked by radiation such as ultraviolet radiation. Examples of gelling agents include acacia, alginic acid, bentonite, carbomer, carboxymethylcellulose sodium, cetostemyl alcohol, colloidal silicon dioxide, ethylcellulose, gelatin, guar gum, hythoxyetlhylcellulose, hydroxypropyl cellulose, hydroxypropyl methylcellulose, magnesium aluminum silicate, maltodextrin, methylcellulose, polyvinyl alcohol, povidone, propylene glycol alginate, sodium alginate, sodium starch glycolate, starch, tragacanth and xanthum gum.

Walt et al do not teach the composition comprises a coating aid. However, coating aids were well known in the art a the time the claimed invention was made as taught by McGall et al. Mc Gall et al specifically teach a coating composition for making a microarray wherein the composition comprises a gelling agent e.g. polyethylene glycol and a coating aid e.g. Triton X-100 (Column 14, lines 4-35). Furthermore McGall et al teach that adding the coating aid to the composition promotes spreading and adhesion of the gelling agent, limits evaporation and promotes longevity of the coated surface (Column 14, lines 29-35). Therefore, It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the coating composition of Walt et al by adding the coating aid as taught by McGall et al for the expected benefit of promoting spreading and adhesion of the gelling agent, limiting evaporation and promoting longevity of the coated surface as taught by Walt et al (Column 14, lines 29-35).

Regarding Claim 2, Walt et al teach the coating composition is used for coating a substrate (page 22, lines 9-22) wherein the substrate is planar (page 7, line 14). The instantly claimed "useful for coating" is a recitation of intended use for the composition.

The courts have stated that a claim containing a recitation with respect to the manner in which a claimed product is intended to be employed does not differentiate the claimed product from a prior art product if the prior art product teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Walt et al and McGall et al teach the structural limitations of the claimed composition and therefore, teach the claimed composition.

Regarding Claim 3,Walt et al disclose the composition wherein the random pattern is preserved (i.e. held in place) upon gelling of the gelling agent (page 22, lines 15-16).

Regarding Claim 4, Walt et al disclose the composition wherein the microspheres are chemically functionalized to have surface active sites (page 14, line 28-page 15, line 33).

Regarding Claim 5, Walt et al disclose the composition wherein the surface active sites can carry organic or inorganic attachments (page 10, lines 2-29).

Regarding Claim 6, Walt et al disclose the composition wherein organic or inorganic attachments on the surface of the active site is capable of chemical or physical interaction (page 14, line 28-page 15, line 33).

Regarding Claim 7, Walt et al disclose the composition wherein the surface active site is bioactive (page 10, lines 2-29).

Regarding Claim 8, Walt et al disclose the composition wherein the bioactive site interacts with nucleic acid, protein or fragment thereof (page 10, lines 2-10).

Regarding Claim 9, Walt et al disclose the composition wherein the microsphere contains a signature (page 16, lines 15-33).

Regarding Claim 10, Walt et al disclose the composition wherein the signature is comprised of an oil-soluble dye i.e. the dye is dissolved in an organic solvent (page 17, lines 21-31).

Regarding Claim 11, Walt et al disclose the composition wherein the signature is interrogatable by optical means (page 16, lines 15-33).

Regarding Claim 15, Walt et al disclose the composition wherein the microspheres have a mean diameter of between 1 and 50 microns (page 9, lines 21-23).

Regarding Claim 16, Walt et al disclose the composition wherein the microspheres have a mean diameter of between 3 and 30 microns (page 9, lines 21-23).

Regarding Claim 17, Walt et al disclose the composition wherein the microspheres have a mean diameter of between 5 and 20 microns (page 9, lines 21-23).

Regarding Claim 18, Walt et al disclose the composition wherein the microspheres are immobilized at a concentration of between 100 and 1 million microspheres per cm^2 (page 6, lines 21-24).

Regarding Claim 19, Walt et al disclose the composition wherein the microspheres are immobilized at a concentration of between 1,000 and 200,000 microspheres per cm^2 (page 6, lines 26-28).

Regarding Claim 20, Walt et al disclose the composition wherein the microspheres are immobilized at a concentration of between 10,000 and 100,00 microspheres per cm^2 (page 6, lines 21-28).

Regarding Claim 21, Walt et al disclose the composition wherein the microspheres comprise a synthetic or natural polymeric material (page 9, lines 11-18).

Regarding Claims 22-23, Walt et al disclose the composition wherein the polymeric material is an amorphous polymer i.e. polystyrene (page 9, lines 11-18).

Regarding Claim 24, Walt et al disclose the composition wherein the microsphere contains a surface active site comprising a functionality selected from the group consisting of carboxy, amine, epoxy, hydrazine, aldehyde and combinations thereof (page 10, lines 11-20).

Regarding Claim 27, Walt et al disclose a microarray comprising a substrate coated with a composition comprising microspheres dispersed in a fluid (i.e. solution) wherein the microspheres are immobilized at random positions on the substrate (page 22, lines 9-22) i.e. the microspheres are within a solution which upon evaporation (gelling) holds the microspheres in place (page 22, lines 15-16) wherein the gelling agent is selected from polyethylene glycol and polyacrylamide (page 22, lines 20-22) which are defined by the specification as gelling agents (page 5, lines 1-15).

Walt et al do not teach the composition comprises a coating aid. However, coating aids were well known in the art a the time the claimed invention was made as taught by McGall et al. Mc Gall et al specifically teach a coating composition for making a microarray wherein the composition comprises a gelling agent e.g. polyethylene glycol and a coating aid e.g. Triton X-100 (Column 14, lines 4-35). Furthermore McGall et al teach that adding the coating aid to the composition promotes spreading and adhesion of the gelling agent, limits evaporation and

promotes longevity of the coated surface (Column 14, lines 29-35). Therefore, It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the coating composition of Walt et al by adding the coating aid as taught by McGall et al for the expected benefit of promoting spreading and adhesion of the gelling agent, limiting evaporation and promoting longevity of the coated surface as taught by Walt et al (Column 14, lines 29-35).

Regarding Claim 28, Walt et al disclose the microarray wherein the substrate is free of receptors designed to physically interaction with the microspheres i.e. the substrate is planer and therefore free of receptors (wells) for physical interaction with the microspheres (page 7, line 14).

Regarding Claim 29, Walt et al disclose the microarray wherein the random pattern is preserved (i.e. held in place) upon gelling of the gelling agent (page 22, lines 15-16).

Regarding Claim 31, Walt et al disclose the microarray wherein the microspheres bear chemically active sites (page 10, lines 2-29).

Regarding Claim 32, Walt et al disclose the microarray wherein the chemically active site is bioactive (page 10, lines 2-29).

Regarding Claim 33, Walt et al disclose the microarray wherein the substrate comprises glass or plastic (page 7, lines 3-12).

Regarding Claim 34, Walt et al disclose the microarray wherein the substrate is flexible i.e. optical fiber (page 7, lines 18-20). It is noted that Claim 34 depends from Claim 25. For purposes of examination, the claim is interpreted as depending from Claim 27.

6. Claims 1-8, 12-13, 24 and 27-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (U.S. Patent Application Publication No. 2002/0015952, filed 1 February 2001) in view of McGall et al (U.S. Patent No. 6,147,205, filed 5 March 1997).

Regarding Claim 1, Anderson et al disclose a coating composition comprising a gelling agent and microspheres dispersed in a fluid i.e. the gelling agent fluid (¶ 81 and 86) wherein upon coating the composition on a substrate, said microspheres become immobilized in the plane of coating and form a random pattern on the substrate (¶ 131-133) i.e. the gel comprising microspheres are introduced in to tubes which are then sliced and placed on a substrate to coat the substrate microspheres immobilized in a non-specific pattern i.e. randomly (Fig. 2-3) wherein the gelling agent is polyacrylamide (¶ 86) which is defined as a gelling agent by the specification (page 5, lines 1-15)

Anderson et al do not teach the composition comprises a coating aid. However, coating aids were well known in the art a the time the claimed invention was made as taught by McGall et al. Mc Gall et al specifically teach a coating composition for making a microarray wherein the composition comprises a gelling agent e.g. polyethylene glycol and a coating aid e.g. Triton X-100 (Column 14, lines 4-35). Furthermore McGall et al teach that adding the coating aid to the composition promotes spreading and adhesion of the gelling agent, limits evaporation and promotes longevity of the coated surface (Column 14, lines 29-35). Therefore, It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the coating composition of Anderson et al by adding the coating aid as taught by McGall et al for the expected benefit of promoting spreading and adhesion of the gelling agent, limiting evaporation and promoting longevity of the coated surface as taught by Walt et al (Column 14, lines 29-35).

Regarding Claim 2, Anderson et al disclose the composition wherein the substrate is characterized by an absence of specific sites capable of interacting with the microspheres i.e.

the substrate is solid surface e.g. glass slide and therefore is characterized by the absence of specific sites e.g. wells capable of physically interacting with the microspheres (¶ 133).

Regarding Claim 3, Anderson et al disclose the composition wherein the random pattern is preserved (i.e. the orientation is maintained) upon gelling of the gelling agent (¶ 131).

Regarding Claim 4, Anderson et al disclose the composition wherein the microspheres can bear surface active sites (¶ 81).

Regarding Claim 5, Anderson et al disclose the composition wherein the surface active sites can carry organic or inorganic attachments (¶ 81).

Regarding Claim 6, Anderson et al disclose the composition wherein the surface of the active site is capable of chemical or physical interaction (¶ 81).

Regarding Claim 7, Anderson et al disclose the composition wherein the surface active site is bioactive (¶ 81).

Regarding Claim 8, Anderson et al disclose the composition wherein the bioactive site interacts with nucleic acid, protein or fragment thereof (¶ 81).

Regarding Claim 12, Anderson et al disclose the composition wherein the gelling agent is gelatin (¶ 86).

Regarding Claim 13, Anderson et al disclose the composition wherein the gelling agent undergoes thermal gelation (Table 1 and ¶ 112).

Regarding Claim 24, Anderson et al disclose the composition wherein the microsphere contains a surface active site comprising a functionality selected from the group consisting of carboxy, amine, epoxy, hydrazine, aldehyde and combinations thereof (¶ 81).

Regarding Claim 27, Anderson et al disclose a microarray comprising a substrate coated with a composition comprising microspheres dispersed in a fluid wherein the microspheres are immobilized at random positions on the substrate (¶ 81 and 131-133) wherein the gelling agent is polyacrylamide (¶ 86) which is defined as a gelling agent by the specification (page 5, lines 1-15)

Anderson et al do not teach the composition comprises a coating aid. However, coating aids were well known in the art a the time the claimed invention was made as taught by McGall et al. Mc Gall et al specifically teach a coating composition for making a microarray wherein the composition comprises a gelling agent e.g. polyethylene glycol and a coating aid e.g. Triton X-100 (Column 14, lines 4-35). Furthermore McGall et al teach that adding the coating aid to the composition promotes spreading and adhesion of the gelling agent, limits evaporation and promotes longevity of the coated surface (Column 14, lines 29-35). Therefore, It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the coating composition of Anderson et al by adding the coating aid as taught by McGall et al for the expected benefit of promoting spreading and adhesion of the gelling agent, limiting evaporation and promoting longevity of the coated surface as taught by Walt et al (Column 14, lines 29-35).

Regarding Claim 28, Anderson et al disclose the microarray wherein the substrate is free of receptors designed to physically interaction with the microspheres i.e. the substrate is solid surface e.g. glass slide and therefore is characterized by the absence of specific sites e.g. wells capable of physically interacting with the microspheres (¶ 133).

Regarding Claim 29, Anderson et al disclose the composition wherein the random pattern is preserved (i.e. the orientation is maintained) upon gelling of the gelling agent (¶ 131).

Regarding Claim 30, Anderson et al disclose the microarray wherein the gelling agent is gelatin (¶ 86).

Regarding Claim 31, Anderson et al disclose the microarray wherein the microspheres bear chemically active sites (¶ 81).

Regarding Claim 32, Anderson et al disclose the microarray wherein the chemically active site is bioactive (¶ 81).

Regarding Claim 33, Anderson et al disclose the microarray wherein the substrate comprises glass or plastic (¶ 81).

Regarding Claim 34, Anderson et al disclose the microarray wherein the substrate is flexible i.e. flexible film (¶ 133).

7. Claims 12-14 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walt et al (WO 00/16101, published 23 March 2000) in view of McGall et al (U.S. Patent No. 6,147,205, filed 5 March 1997) as applied to Claims 1 and 27 above and further in view of Anderson et al (U.S. Patent Application Publication No. 2002/0015952, filed 1 February 2001).

Regarding Claim 12, Walt et al teach a coating composition comprising a gelling agent and microspheres dispersed in a fluid (page 22, lines 9-22) wherein upon coating the composition on a substrate, said microspheres become immobilized in the plane of coating and form a random pattern on the substrate i.e. the microspheres are held in place by the gelling agent (page 22, lines 15-16) wherein the gelling agent is a known gelling agent permeable to aqueous species (page 22, lines 19-22) but they do not specifically teach the gelling agent is gelatin. However, Anderson et al teach the similar composition comprising a gelling agent and microspheres dispersed in a fluid i.e. the gelling agent fluid (¶ 81 and 86) wherein upon coating the composition on a substrate, said microspheres become immobilized in the plane of coating and form a random pattern on the substrate (¶ 131-133) wherein the gelling agent is gelatin which, unlike other gelling agents, sets at a temperature below ambient temperature (¶ 86, lines 18-21). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the gelatin gelling agent of Anderson et al to the gelling

agent of Walt et al to thereby use a gelling agent which gels at ambient temperature for the obvious benefits of convenience and simplicity of gelling.

Regarding Claim 13, Walt et al teach the composition wherein the gelling agent is a known gelling agent permeable to aqueous species (page 22, lines 19-22) but they do not specifically teach a gelling agent which requires thermal gelation. Anderson et al teach the similar composition wherein the gelling agent requires thermal gelation whereby the physical dimensions of the gelled composition is altered by applying heat i.e. a macro array is "shrunk" to a microarray (¶ 112). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the thermal gelation of Anderson et al to the gelling agent of Walt et al whereby a macroarray becomes a microarray by simple application of heat. One of ordinary skill in the art would have been motivated apply the thermal gelation of Anderson et al to create a microarray because this method would simplify microarray production by eliminating the need for micro-scaled tools. Therefore, it would have been obvious to one of ordinary skill in the art to apply the thermal gelation of Anderson et al to the gelling of Walt et al for the expected benefit of simplifying microarray production.

Regarding Claim 14, Walt et al teach the composition is used for a wide variety of chemical and physical interactions (pages 35-36) but they are silent regarding alkali pretreatment of the gel. Anderson et al teach their similar composition is also used for a wide variety of chemical and physical interactions and wherein the environmental conditions for reactions within the composition vary for different reactions (¶ 54). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the gelling agent of Walt et al by alkali pretreating the gelling agent as claimed based on the interaction to be detected for the obvious benefit of facilitating binding of the agents of interest as taught by Anderson et al (¶ 54).

Regarding Claim 30, Walt et al teach a microarray comprising a substrate coated with a composition comprising microspheres dispersed in a fluid wherein the microspheres are

immobilized at random positions on the substrate (page 22, lines 9-22) wherein the gelling agent is a known gelling agent permeable to aqueous species (page 22, lines 19-22) but they do not specifically teach the gelling agent is gelatin. However, Anderson et al teach the similar composition comprising a gelling agent and microspheres dispersed in a fluid i.e. the gelling agent fluid (¶ 81 and 86) wherein upon coating the composition on a substrate, said microspheres become immobilized in the plane of coating and form a random pattern on the substrate (¶ 131-133) wherein the gelling agent is gelatin which, unlike other gelling agents, sets at a temperature below ambient temperature (¶ 86, lines 18-21). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the gelatin gelling agent of Anderson et al to the gelling agent of Walt et al to thereby use a gelling agent which gels at ambient temperature for the obvious benefits of convenience and simplicity of gelling.

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walt et al (WO 00/16101, published 23 March 2000) in view of McGall et al (U.S. Patent No. 6,147,205, filed 5 March 1997) as applied to Claims 1 and 27 above and further in view of Chang et al (U.S. Patent No. 4,873,102, issued 10 October 1989).

Regarding Claim 26, Walt et al teach a coating composition comprising a gelling agent and microspheres dispersed in a fluid (page 22, lines 9-22) wherein upon coating the composition on a substrate, said microspheres become immobilized in the plane of coating and form a random pattern on the substrate i.e. the microspheres are held in place by the gelling agent (page 22, lines 15-16) wherein the microspheres contain a polymeric material comprising methylstyrene and divinylbenzene (page 17, lines 21-23) but they are silent regarding the

polymerization method. However, emulsion polymerization preparation of microspheres was well known in the art at the time the claimed invention was made as taught by Change et al (Example 1, Column 6, lines 25-57) wherein the method provides microspheres of very narrow size range. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the emulsion polymerization of Change et al to the microspheres of Walt et al to thereby provide microspheres of a uniform size as taught by Chang et al (Column 6, lines 26-28) for the obvious benefits of providing consistent microsphere surface area for surface interaction and thereby controlling interaction uniformity.

Response to Arguments

9. Regarding Walt et al, Applicant argues that immobilization is accomplished using Nafion and not by a "sol-gel transition medium". The argument has been considered but is not found persuasive because, as discussed above, Walt et al specifically teach the gelling agent is selected from polyethylene glycol and polyacrylamide as encompassed by the definition in the instant specification. Furthermore, arguments regarding "sol-gel transition medium" are not relevant to the instant claims because the claims are not limited to a sol-gel transition medium.

Applicant cites page 7, lines 3-5 to illustrate that Walt et al do not teach a support as claimed. However, reading the cited passage carefully reveals that Walt et al is describing ONE embodiment by teaching that the "substrate.....can be modified to contain discrete individual sites". However, as noted above, Walt et al specifically teach that the "Generally the substrate is planar".

Regarding Anderson et al, Applicant argues that the reference does not teach spreading the microspheres uniformly onto the surface via a sol to gel transition medium. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., spreading the microspheres uniformly and sol to gel transition medium) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding the combination of Walt et al and Anderson et al, Applicant argues that the references do not provide a motivation for combining the teachings. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Anderson et al provide the motivation to replace the gelling agent of Walt et al with a gelatin gelling agent i.e. the gelling agent is gelatin which, unlike other gelling agents, sets at a temperature below ambient temperature (¶ 86, lines 18-21) and therefore does not require further treatment and/or heat for gelling. Anderson further provide motivation for using gelling agent which undergoes thermal gelation i.e. a microarray is produced by simply shrinking a macro array (¶ 112).

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

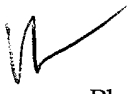
Conclusion

11. No claim is allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878. The examiner can normally be reached on 6:30 TO 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.



BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
July 29, 2003